



# Evaluation of the Burn Patients Presenting to Emergency Clinic of a Education Hospital

## Bir Eğitim Hastanesi Acil Polikliniğine Başvuran Yanık Vakaların Değerlendirilmesi

Yanık Hastalarının Değerlendirilmesi / Evaluation of the Burn Patients

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### Özet

Amaç: Yanık tüm yaş gruplarında önemli bir morbidite ve mortalite nedenidir ve tedavisi multidisipliner yaklaşım gerektirir. Bu çalışmamızda yanık olgularımızı değerlendirmek ve literatür eşliğinde tartışmak amaçlanmıştır. Gereç ve Yöntem: Ocak 2008-2009 yılları arasında acil servise başvuran 449 yanık olgusu retrospektif olarak değerlendirilmiştir. Bulgular: Yanık vakalarının çoğu yaz aylarında meydana gelmiştir. Olguların çoğu 25-34 yaş grubu arasındaydı. Alev tipi yanıklar haşlanma tipinden daha fazla görülmüştür. Üst ekstremitelerde yanıklar en sık görülen yanık lokalizasyonuydu ve yanıklar en sık işyerinde ikinci sıklıkta evde yanma sebebiyle oluşmaktaydı. Sonuç: Yanık önemli bir sosyal sağlık sorunudur. Tedbirsizlik ve kazalar yanıkların meydana gelmesini kolaylaştırmaktadır. Önleme en önemli tedavi yöntemidir.

### Anahtar Kelimeler

Yanık; Epidemiyoloji; Acil Servis

### Abstract

Aim: Burn is a significant cause of morbidity and mortality in all age groups. Its treatment requires a multidisciplinary approach. In this study we aimed to evaluate burn cases and discuss the relevant literature. Material and Method: 449 burn patients presenting to the Emergency Clinic in January 2008-2009 were retrospectively evaluated accompanied by the literature. Results: Most of the burns occurred in summer months. The most age group suffering from burns was between 25 and 34 years. Flame-type burns were more frequent than scald-type burns. Burns most often occurred at workplaces, which was followed by homes. The upper extremities were most often afflicted by burns. Discussion: Burns are an important social health issue. Imprudence and accidents facilitate burn occurrence. Prevention is the most significant treatment method.

### Keywords

Burn; Epidemiology; Emergency Department

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Introduction

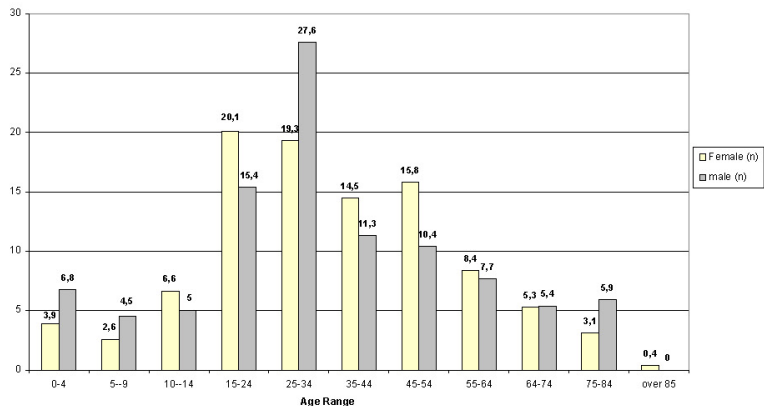
Burn is a coagulation necrosis that occurs when tissues are exposed to factors such as heat, electric, chemicals, and radiation. Socioeconomic factors also play a crucial role in the occurrence of burns. Their treatment requires a multidisciplinary approach and special centers. Protection is the most significant treatment method.

Material and Method

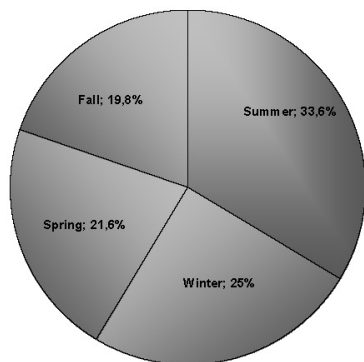
The patients who presented to the Emergency Clinic during January 2008-2009 with burns were retrospectively evaluated in terms of epidemiology, etiology, demographics data and treatment method.

The patients was treated in accordance with the general rules

Graph 1: Distribution of the patients presenting to the Emergency Clinic according to gender and age range



Graph 2: Classification of the patients presenting to the Emergency Clinic according to seasons



of trauma, and followed by washing the burn areas with abundant saline solution to eliminate the burning agents immediately. Evaluation of the burn areas was performed according to Wallace’s rule of nines. Following the Parkland formula, resuscitation was first performed with crystalloid fluids. In severe burns, the central vascular access was made and venous pressure was monitored.

All the patients were evaluated for tetanus prophylaxis and were regarded as judicial cases. Care of the burn wounds included washing with fresh water, washing with saline solution, wet dressing, and dressing with 1% silver sulphadiazine or 0.5% povidone iodine.

All the patients who suffered electrical burns were carefully

monitored for myocardial contusion, myocardial infarction, valve failure, and ventricular fibrillations.

Results

A total of 449 patients presented to the Emergency Clinic of Izmir Bozyaka Training and Research Hospital in 2008 in one year with burns. Of these patients, 25 (5.5%) were hospitalized. The rest received outpatient treatment and followed up by the polyclinic. 228 of the patients presenting to the Emergency Clinic were female (50.8%) and 221 were male (49.2%). The mean age of the patients was 33.2 (range 0-89), with a large percentage of them (23.4%) in the age range of 25-34.(Graph 1).

In patients presenting to the emergency clinic, the burns occurred in summer and winter, 33.6% and 25% respectively. Among the patients presenting, burns most often occurred in July, August and February (52/449), (47/449) and (45/449), respectively (Graph 2).

The presentation hours of the patients were usually afternoon and evening hours (Graph 3).

Among the patients females often had scald type (153/228) and males mostly had flame type (182/221) burns (Table 1).

In the patients, the most often affected area was hands, lower extremity, upper extremity and face (159/449), (120/449) (106/449), (54/449). Inhalation burn was detected in one patient. Interestingly enough, a second-degree burn occurred in a patient who had uterus prolapsus and suffered perineum burn.

In the patients, burns with a total body surface area (TBSA) of lower than 10% formed the majority (Table 2) and most of the patients were classified as having second-degree burns according to burn depth (Graph 4)

A majority of the patients had accidents in their work place (63, 53.8%) and the place where burns occurred the second most frequently was homes (48, 45.3%). A patient suffered a burn (0.85%) during a traffic accident in the vehicle.

The time to hospital presentation of the hospitalized patients ranges between 30 minutes and 30 days.

In patients, burn occurrence was identified to be caused by suicide attempts in four patients (one female, three males) and by homicide attempt in one patient (female). Psychotic disorders were found in two of the patients with suicide.

Discussion

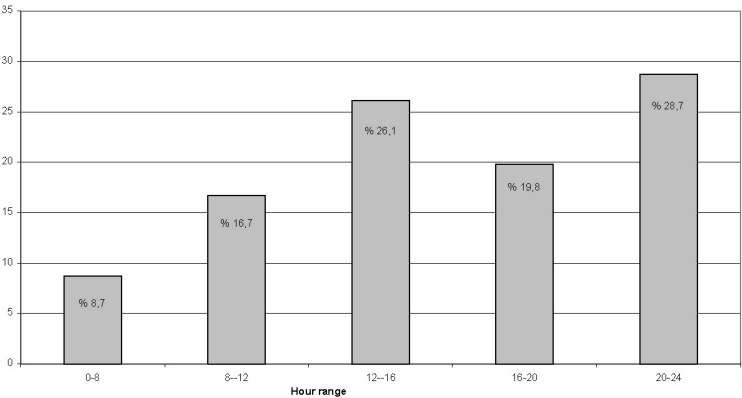
In our study, the patients presenting to the Emergency Clinic with burns amounted to 2.9% of all patients, a rate reported by Chipp et al. as 1% [1]. This high rate in our study could be attributed to the fact that even patients with very mild burns presented to the emergency clinic.

Only 14.6% of the patients were below 15 years of age, which can be explained by the fact that some child patients directly presented to children’s hospitals.

The patients often presented to the hospital during the day and evening between 10 and 24 o’clock, a finding that is consistent with the literature [1].

Among the burn patients presenting to the Emergency Clinic,

Graph 3. The presentation hours of the patients to the Emergency Clinic



Graph 4. Classification of the patients presenting to the Emergency Clinic according to burn depth

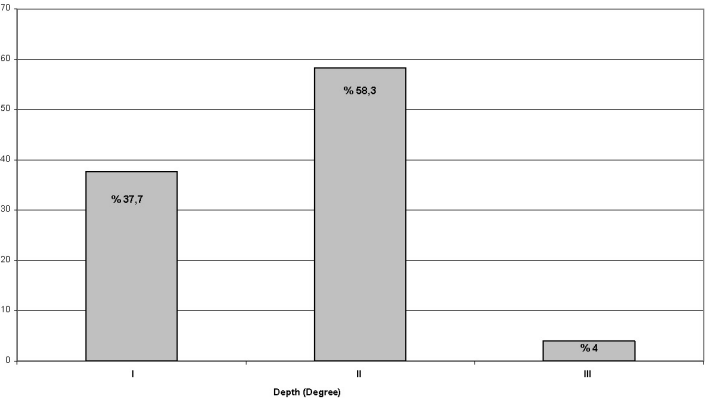


Table 1. Burn types among the patients presenting to the Emergency Clinic in terms of gender

Type	Female (n)	%	Male (n)	%	Total (n)	%
Scald	152	66,7	93	42,1	245	54,5
Flame	71	31,1	112	51,1	184	40,9
Chemical	5	2,2	6	2,7	11	2,5
Electrical	0	0	6	2,3	5	1,1
Sun	0	0	4	1,8	4	1
Total	228	100	221	100	449	100

Table 2. Distribution of the burn areas of the patients presenting to the Emergency Clinic according to TBSA

TBSA (%)	Famele (n)	%	Male (n)	%	0 - 5 age (n)	%
Lower than 10	211	92,5	204	92,3	18	4
10 – 19	11	4,8	9	3,9	-	-
20 – 29	2	0,9	3	1,4	-	-
30 – 39	2	0,9	2	0,9	-	-
40 – 49	1	0,4	2	0,9	-	-
Over 50	1	0,4	1	0,4	-	-
Total	228	100	221	100	18	4

the female to male ratio was close; however, there was male dominance (77.7%) in hospitalized patients. Similar rates have been reported in the literature [2,3], though contrary reports have also been made [4,5]. Burns most often occurred in patients in summer, followed by winter. Many studies have reported that burns often occurred in winter [6,7]; yet, another study reported it as summer [8]. Our results are compatible with later literature.

The sites that were most often exposed to burns have been reported as the head, upper extremity, lower extremity, and torso, respectively. This is compatible with some studies [2,8,9,10], but incompatible with others [4,11,12].

The rate of burns caused by suicide attempts in our patients was 3.4%, in whom male to female ratio was 1/3. Our result is similar to the result of 2.4% reported by Chien et al [2]. On the contrary, many studies have reported higher rates [13].

In patients, most of the burns occurred in workplaces (53.8%), a finding which is usually in conflict with the literature [2,4,7]. This difference in our study could be attributed to the fact that our hospital used to offer medical care to the worker group.

Among the patients, scald burns often occurred in females (66.7%) and flame burns in males (51.1%), while in general, the prevalence of scald and flame burns was similar with 54.5% and 40.9%, respectively. Similar findings have been reported in the literature [1, 14, , 15].

A majority of the patients had burns lower than 10 % ( 92.3%). As for the burn degrees, a majority of 58.3% had second-degree burns. These results are in agreement with the literature [16].

In conclusion, along with permanent physical damage it causes, it also constitutes an important social health problem with high treatment costs. Prevention programs and suitable first aid should be developed towards at risk groups.

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